

## **LISTING OF CLAIMS**

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This listing of claims will replace all prior versions, and listings, of claims in the application:

1-151 (Withdrawn)

- 5        152. (Original) A process for manufacturing an imaged ceramic product with specified design properties, comprising the steps of:
- (a) determining the design properties desired for said imaged ceramic product;
- 10        (b) electronically transmitting an order for said imaged ceramic product with said desired design properties to a fabricator of an imaged decal assembly;
- (c) fabricating an imaged transfer assembly comprising a printed digital image;
- (d) transferring said digital printed image to a ceramic substrate to produce a digitally printed ceramic substrate assembly; and
- 15        (e) heat treating said digitally printed ceramic substrate assembly to produce said imaged ceramic product.
153. (Original) The process as recited in claim 152, wherein said design properties are determined by reference to the world wide web.
- 20        154. (Original) The process as recited in claim 152, wherein said design properties are determined by reference to a web site.
155. (Original) The process as recited in claim 154, wherein said web site contains illustrations of some images that may be placed onto said ceramic substrate.
- 25        156. (Original) The process as recited in claim 152, further comprising the step of determining the type of ceramic substrate.
157. (Original) The process as recited in claim 152, further comprising the step of determining the thickness of the ceramic substrate.
158. (Original) The process as recited in claim 152, further comprising the
- 30        step of determining the shape of the ceramic substrate.

159. (Original) The process as recited in claim 152, further comprising the step of determining the finish of the ceramic substrate.
160. (Original) The process as recited in claim 152, further comprising the step of selecting the image that is to be printed.
- 5 161. (Original) The process as recited in claim 160, further comprising the step of determining the size of the image.
162. (Original) The process as recited in claim 161, further comprising the step of determining the location on the ceramic substrate of the image that is to be transferred.
- 10 163. (Original) The process as recited in claim 162, further comprising the step of determining the color of the image that is to be transferred.
164. (Original) The process as recited in claim 152, wherein said imaged decal assembly is comprised of a flexible support and, disposed on said support, a ceramic ink image, and wherein said ceramic ink image is
- 15 comprised of from about 15 to about 75 weight percent of a solid, volatilizable carbonaceous binder.
165. (Original) The process as recited in claim 164 wherein said ceramic ink image comprises from about 23 to about 75 weight percent of a film-forming glass frit.
- 20 166. (Original) The process as recited in claim 165, wherein, when said solid, volatilizable, carbonaceous binder is heated at a temperature greater than 500 degrees Centigrade for at least 6 minutes in an atmosphere containing at least about 15 volume percent of oxygen, the binder is substantially volatilized such that less than about 5 weight percent of
- 25 said carbonaceous binder remains as a solid phase.
167. (Original) The process as recited in claim 166, wherein said film-forming frit has a melting point of greater than about 300 degrees Celsius.
168. (Original) The process as recited in claim 167, wherein said imaged decal assembly is comprised of an opacifying agent, and wherein said
- 30 opacifying agent has a particle size distribution such that substantially all of its particles are smaller than about 20 microns.

169. (Original) The process as recited in claim 168, wherein said opacifying agent has a first refractive index, and said film-forming frit has a second refractive index, such that the difference between said first refractive index and said second refractive index is at least about plus or minus 0.1.

170. (Original) The process as recited in claim 169, wherein said opacifying agent has a first melting point, and said film-forming frit has a second melting point, such that said first melting point exceeds said second melting point by at least about 50 degrees Celsius.

171. (Original) The process as recited in claim 170, wherein said opacifying agent has a first concentration in said ceramic ink image, said film-forming glass frit has a second concentration in said ceramic ink image, such that the ratio of said first concentration to said second concentration is no greater than about 1.25.

172. (Original) The process as recited in claim 152, further comprising the step of formatting data relating to said design properties.

173. (Original) The process as recited in claim 152, further comprising the step of creating an encapsulated postscript file.

174. (Original) The process as recited in claim 152, further comprising the step of creating a tagged image format file.

175. (Original) The process as recited in claim 152, further comprising the step of scanning an image.

176. (Original) The process as recited in claim 152, further comprising the step of printing an image onto a thermal transfer ribbon assembly.

177. (Original) The process as recited in claim 176, wherein said thermal transfer ribbon assembly is comprised of a thermal transfer ribbon, and wherein said thermal transfer ribbon is contiguous with a covercoated transfer decal.

178. (Original) The process as recited in claim 177, wherein said covercoated transfer decal is comprised of a flat, flexible support and a transferable covercoat releasably bound to said flat, flexible substrate.

179. (Original) The process as recited in claim 178 wherein, when said transferable covercoat is printed with an image to form an imaged decal assembly, said image has a higher degree of adhesion to said covercoat than said covercoat has to said flexible substrate.

5 180. (Original) The process as recited in claim 152, further comprising the step of cutting said digitally printed support assembly to a desired size.

181. (Original) The process as recited in claim 152, further comprising the step of packing said digitally printed support assembly.

10 182. (Original) The process as recited in claim 152, further comprising the step of shipping said digitally printed support assembly.

183. (Original) The process as recited in claim 152, further comprising the step of tempering said digitally printed ceramic substrate.

184. (Original) The process as recited in claim 152, further comprising the step of framing said imaged ceramic product.

15 185. (Original) The process as recited in claim 152, further comprising the step of attaching hardware to said imaged ceramic product.

186. (Original) The process as recited in claim 152, comprising the step of applying adhesive to said imaged ceramic substrate.

20 187. (Original) The process as recited in claim 152, wherein said ceramic substrate is comprised of at least about 50 weight percent of silica.

188. (Original) The process as recited in claim 152, wherein said ceramic substrate is comprised of at least about 60 weight percent of silica.

189. (Original) The process as recited in claim 152, wherein said ceramic substrate is comprised of at least about 70 weight percent of silica.

25 190. (Original) The process as recited in claim 152, wherein said ceramic substrate has a melting point greater than about 300 degrees Celsius.

191. (Original) The process as recited in claim 152, wherein said ceramic substrate is flat.

30 192. (Original) The process as recited in claim 152, wherein said ceramic substrate has a Sheffield smoothness of less than about 200 Sheffield units.

193. (Original) The process as recited in claim 152, wherein said ceramic substrate has a Sheffield smoothness of less than about 100 Sheffield units.
- 5 194. (Original) The process as recited in claim 152, wherein said ceramic substrate has a Sheffield smoothness of less than about 20 Sheffield units.
195. (Original) The process as recited in claim 152, wherein said ceramic substrate is transparent.
- 10 196. (Original) The process as recited in claim 152, wherein said ceramic substrate is opaque.
197. (Original) The process as recited in claim 152, wherein said ceramic substrate has a thickness of from about 0.1 to about 0.8 inches.
198. (Original) The process as recited in claim 152, wherein said ceramic substrate is glass.
- 15 199. (Original) The process as recited in claim 198, wherein said glass is a soda-lime glass.
200. (Original) The process as recited in claim 198, wherein said glass is comprised of silica and at least one metal oxide.
- 20 201. (Original) The process as recited in claim 198, wherein said glass is comprised of calcium oxide.
202. (Original) The process as recited in claim 198, wherein said glass is comprised of sodium oxide.
- 25 203. (Original) The process as recited in claim 198, wherein said glass is selected from the group consisting of a potash-lime glass, lead glass, lead-alkali glass, borosilicate glass, aluminosilicate glass, phosphate glass, fused silica glass, flint glass, crystal glass, 96 percent silica glass, borax glass, optical glass, plate glass, conductive glass, colored glass, Monax glass, oxycarbide glass, and mixtures thereof.
- 30 204. (Currently Amended) The process as recited in claim 152, wherein ~~wherein~~ said ceramic substrate is an optical fiber comprised of glass.

205. (Original) The process as recited in claim 152, wherein said ceramic substrate is a glass-ceramic substrate.

206. (Original) The process as recited in claim 152, wherein said ceramic substrate comprises a coating of ceramic material disposed upon a non-ceramic material.

207. (Original) The process as recited in claim 206, wherein said non-ceramic material is steel.

208. (Original) The process as recited in claim 207, wherein said ceramic material is porcelain enamel.

209. (Currently Amended) ~~208.~~ The process as recited in claim 152, further comprising the step of cutting said ceramic substrate.

210. (Currently Amended) ~~209.~~ The process as recited in claim 152, further comprising the step of grinding said ceramic substrate.

211. (Currently Amended) ~~210.~~ The process as recited in claim 152, further comprising the step of polishing said ceramic substrate.

212. (Currently Amended) ~~211.~~ The process as recited in claim 152, further comprising the step of beveling said ceramic substrate.

213. (Currently Amended) ~~212.~~ The process as recited in claim 152, further comprising the step of forming a hole in said ceramic substrate.

214. (Currently Amended) ~~213.~~ The process as recited in claim 152, further comprising the step of washing said ceramic substrate.

215. (Currently Amended) ~~214.~~ The process as recited in claim 214 ~~213~~, wherein said substrate is washed with hot liquid at a temperature of from about 40 to about 90 degrees Centigrade, thereby producing a washed substrate.

216. (Currently Amended) ~~215.~~ The process as recited in claim 215 ~~214~~ wherein said hot liquid is hot water.

217. (Currently Amended) ~~216.~~ The process as recited in claim 216 ~~215~~ comprising the step of drying said washed substrate to a moisture content of less than about 2 percent, thereby producing a dried substrate

218. (Currently Amended) ~~217.~~ The process as recited in claim 217 ~~216~~, comprising the step of applying adhesive to said dried substrate.
219. (Currently Amended) ~~218.~~ The process as recited in claim 218 ~~217~~, wherein said adhesive is pressure sensitive adhesive.
- 5      220. (Currently Amended) ~~219.~~ The process as recited in claim 219 ~~218~~, further comprising the step of applying a pressure of from about 10 pounds per square inch to about 100 pounds per square inch to said applied adhesive while subjecting said adhesive to a temperature of from about 0 to about 50 degrees Centigrade.
- 10     221. (Currently Amended) ~~220.~~ The process as recited in claim 220 ~~219~~, wherein said pressure is applied to said adhesive by a first laminator nip.
222. (Currently Amended) ~~221.~~ The process as recited in claim 221 ~~220~~, wherein said pressure is applied to said adhesive by a second laminator nip.
- 15     223. (Currently Amended) ~~222.~~ The process as recited in claim 152, further comprising the steps of providing an imaged decal assembly comprised of a covercoated transfer sheet.
224. (Currently Amended) ~~223.~~ The process as recited in claim 223 ~~222~~, comprising the step of printing a digital image onto said covercoated
- 20     transfer sheet to produce an imaged transfer decal.
225. (Currently Amended) ~~224.~~ The process as recited in claim 152, further comprising the step of drying said ceramic substrate to a moisture content of less than about 0.1 percent, thereby producing a dried ceramic substrate.
- 25     226. (Currently Amended) ~~225.~~ The process as recited in claim 225 ~~224~~, comprising the step of transferring a digitally printed image to said dried ceramic substrate to produce a digitally printed assembly comprised of said ceramic substrate and, disposed on said ceramic substrate, a digitally printed ceramic ink image.
- 30     227. (Currently Amended) ~~226.~~ The process as recited in claim 226 ~~225~~, wherein said ceramic ink image comprises from about 15 to about 94.5

weight percent of a solid, volatilizable, carbonaceous binder, from about 5 to about 75 weight percent of a film-forming frit, and at least about 0.5 weight percent of an opacifying agent.

5        228. (Currently Amended) ~~227.~~ The process as recited in claim 152, comprising the step of subjecting said digitally printed ceramic substrate to a temperature of from about 620 to about 650 degrees Celsius for from about 3 to about 5 minutes.

10        229. (Currently Amended) ~~228.~~ The process as recited in claim 228 ~~227~~, wherein, after said digitally printed ceramic substrate has been subjected to said temperature of from about 620 to about 650 degrees Celsius for from about 3 to about 5 minutes, it is quenched to produced a quenched digitally printed assembly.

230. (Currently Amended) ~~229.~~ A method of providing an image for application to an object, comprising the steps of:

- 15        (a) collecting order details and specifications regarding decoration with a web based tool;
- (b) transferring said collected order details and specifications to a service provider;
- 20        (c) processing and integrating said transferred order details and specifications into a standardized digital format;
- (d) saving said processed and integrated order details and specifications to a file;
- (e) transmitting said saved order details and specifications to a digital printer;
- 25        (f) producing an imaged transfer decal with said digital printer according to the instructions stored in said saved order details and specifications;
- (g) transferring said imaged transfer decal to an applicator;
- 30        (h) preparing a ceramic substrate according to said collected order details and specifications;



- (i) positioning said imaged transfer assembly with respect to said prepared ceramic substrate and transferring said image to said prepared ceramic substrate; and
- (j) heat treating said transferred image and said ceramic substrate.

5        231. (Currently Amended) ~~230.~~ A method for providing an imaged substrate, comprising the steps of:

- (a) promoting, collecting and transferring order details to a service provider via a web based tool in a standardized format;
- (b) digitally producing an imaged transfer decal to said order details;
- 10        (c) positioning said imaged transfer assembly with respect to said prepared ceramic substrate and transferring said image to said prepared ceramic substrate;
- (d) heat treating said transferred image and said ceramic substrate; and

15        (e) fabricating said heat treated digitally printed assembly according to order details.

231-236 (withdrawn)